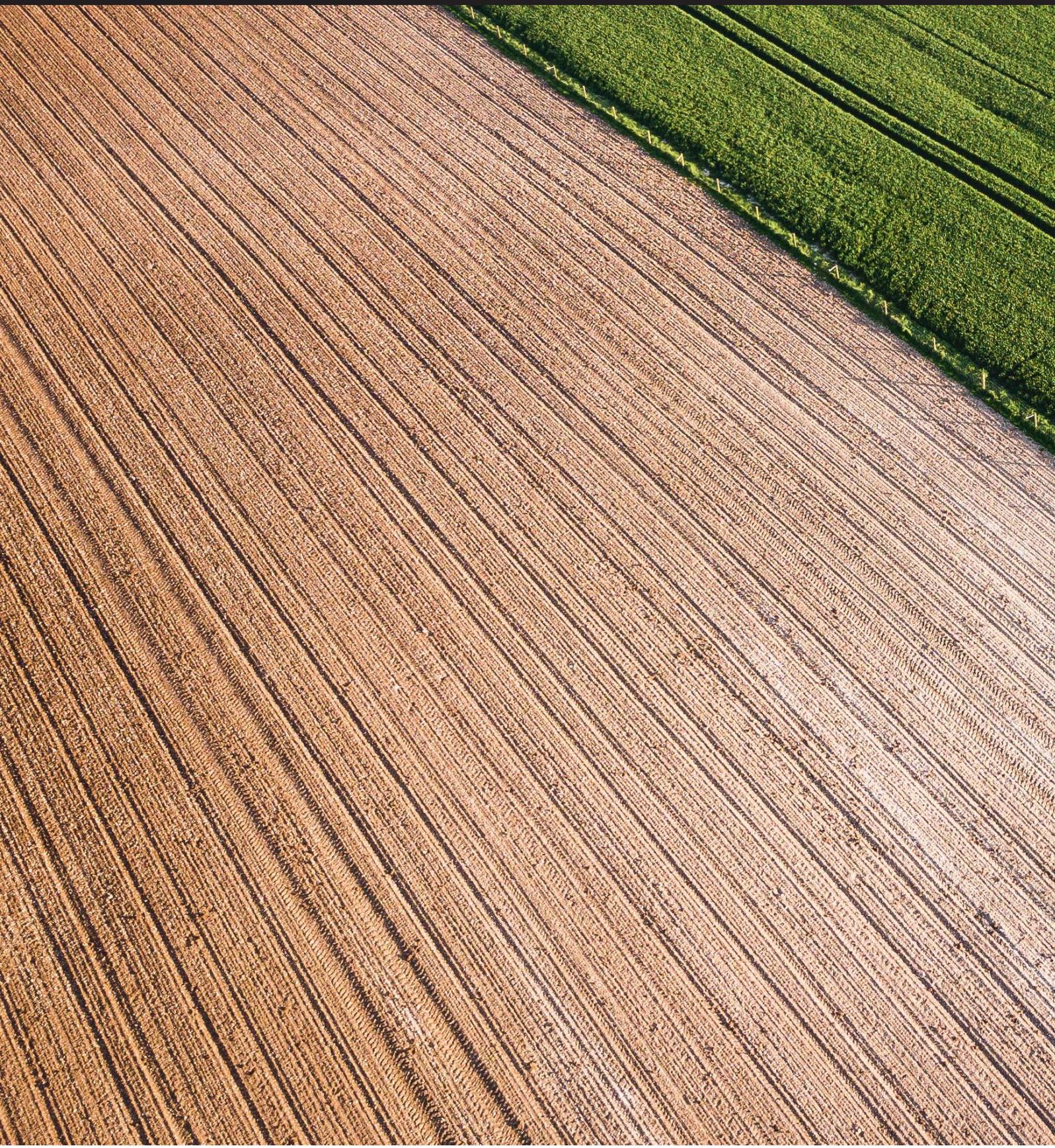


## Greenhouse Gas (GHG) Emissions Report 2021/2022



## **Summary & Carbon Management Targets**

### **Baseline Year**

Our baseline year is 2008/9. In 2012/13 we re-calculated our baseline using the new conversion factors as instructed by DEFRA.

### **2022 Intensity Measurement and Targets for the Future**

We have chosen 'tonnes of CO<sub>2</sub>e per full time equivalent' as this is the most appropriate measurement for local authorities. Only scope 1 and scope 2 emissions are used to calculate the intensity measurement as per DEFRA Guidance. (Please note, our intensity measurements have been re-calculated for all previous years to reflect this guidance).

Our carbon intensity measurement is **5.4**, which has increased from 3.9.

Historically targets were set through the Local Area Agreement for Lincolnshire (2008/9 to 2010/11) for NI 185 CO<sub>2</sub> emissions and through the Carbon Measurement Plan (2008/09 to 2013/14).

The council has approved a new Carbon Management Plan in July 2021 which has set a target of reducing the Council's Carbon Emissions to net-zero by 2050. More information on the plan and how we plan to achieve this target can be found here: [Carbon Management | West Lindsey District Council \(west-lindsey.gov.uk\)](https://www.west-lindsey.gov.uk/carbon-management)

This year, we have seen our CO<sub>2</sub>e emissions increase by **236t to 1591t**.

For the second year running we have seen an increase in our Greenhouse Gas emissions. This is as we expand activity with the recovery from Covid and the emissions from the new Market Rasen Leisure Centre and Lea Field Crematorium hit our inventory for the first time. As the country starts to return to a new normal post-pandemic we have seen higher occupancy of our buildings and more employee and councilor mileage as our operations start to return to normal and in turn have increased power consumption and travel.

Efficiencies in building emissions have been achieved as two old waste depots have been replaced with a modern, energy efficient, central facility at Caenby Corner. But, as expected, emissions from the refuse fleet have increased as the district has expanded and a new vehicle has been added to keep up. West Lindsey are engaged with the Energy Saving Trust and are developing a vehicle decarbonisation strategy to decouple housing growth from increased CO<sub>2</sub>e emissions. But perhaps the most notable increase, has come from a sharp uptake in gas usage from Gainsborough leisure centre. A spike was to be expected as visitor numbers increased after the lifting of pandemic lockdown restrictions in place for much of 2020 and 2021, but the 440 CO<sub>2</sub>e tonnage emissions from the site now represents more than a quarter of total WLDC emissions. This brings CO<sub>2</sub>e levels from the site to 2014/15 levels and is a worrying trend given the steady emissions reductions that were occurring there until 2018/19.

It is considered that a significant contributor to the rise, is the combined heat and power boiler, fitted at the end of 2018, that uses gas to both heat and power the building in place of electricity. The relative CO<sub>2</sub>e emissions for gas are much higher than electricity from the grid now, due to extensive decarbonisation of the electricity grid over the last few years.

This is an issue which is being investigated in conjunction with the Centre Manager and further work is being undertaken to understand what opportunities there are to improve the energy efficiency of the site. Initial studies have been undertaken and a further energy audit is planned for the end of 2022. Equally, we are aware of a number of grants being made available and as such, assessment against criteria will be made with a view to accessing funds as and when appropriate.

It is worth noting that actions to 'turn the emissions curve' have already been instigated, with additional activities planned as set out in the action plan. First and foremost are activities to reduce energy demand and fuel usage from our buildings and vehicles, but the decision taken to move to a fully traceable, green electricity tariff from October 2022 is expected to reduce CO<sub>2</sub>e emissions by over 100 tonnes per annum.

## **Definitions**

**Carbon Dioxide Equivalent** – *Carbon Dioxide Equivalent (CO<sub>2</sub>e) is a universal measurement that allows the climate impact of different Greenhouse Gases to be compared on a like-for-like basis. All Greenhouse Gas emissions at WLDC are reported using this metric.*

**Intensity Measurement** - *Tonnes of CO<sub>2</sub>e per full-time equivalent member of staff. This is calculated, as per DEFRA guidance by using Scope 1 and Scope 2 emissions only.*

**Conversion Factor** – *The number by which the metric of activity is multiplied in order to determine CO<sub>2</sub>e emissions.*

**Scope 1 Emissions** – *Emissions that are produced by sources owned, operated or controlled by the organisation.*

**Scope 2 Emissions** – *Emissions from the consumption of purchased electricity, steam, or other sources of energy (e.g. chilled water) generated upstream from the organisation.*

**Scope 3 Emissions** - *Emissions that are consequence of the operations of an organisation, but are not directly owned or controlled by the organisation.*

*For WLDC purposes, the activities measured by each scope are contained in Table 1.*

## **Abbreviations**

**CO<sub>2</sub>e** – Carbon Dioxide Equivalent

**DEFRA** – Department for Environment, Food & Rural Affairs

**WLDC** – West Lindsey District Council

**GHG** – Greenhouse Gas

**T&D** – Transmission & Distribution Losses

**NEF** – National Energy Foundation

**FTE** – Full Time Equivalent

**APSE** – Association for Public Service Excellence

# Summary of WLDC Greenhouse Gas Emissions 2008/9 – 2021/22

**Table 1: WLDC GHG Emissions Data 2008/9 – 2021/22**

GHG Emissions data for 01/04/21 - 31/03/22														
Tonnes of CO <sub>2</sub> e <sup>1</sup>														
	2021/22	2020/21	2019/20	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14	2012/13	2011/12	2010/11	2009/10	2008/09
<b>Scope 1</b>	864.5	794	752	717	711	714	732	765	741	804	708	747	448	708
<b>Scope 2</b>	154.25	139	156	180	230	265	318	269	256	326	388	522	583	615
<b>Scope 3</b>	524.9	377	379	451	512	598	592	622	622	615	516	613	659	713
<b>Outside of scopes</b>	47.72	45	8	8	15	15	20	15	15	-	-	-	-	-
<b>Total gross emissions</b>	<b>1591.37</b>	<b>1355</b>	<b>1295</b>	<b>1356</b>	<b>1468</b>	<b>1592</b>	<b>1662</b>	<b>1671</b>	<b>1634</b>	<b>1745 <sup>4</sup></b>	<b>1612<sup>4</sup> (1474)<sup>2</sup></b>	<b>1881<sup>4</sup> (1658)<sup>2</sup></b>	<b>1691 <sup>3</sup> (1746)<sup>2</sup></b>	<b>2036 <sup>3</sup> (2111)<sup>2</sup></b>
<b>Carbon offsets</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Green tariff</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total annual net emissions</b>	<b>1591.37</b>	<b>1355</b>	<b>1295</b>	<b>1356</b>	<b>1473</b>	<b>1592</b>	<b>1662</b>	<b>1671</b>	<b>1634</b>	<b>1745</b>	<b>1612</b>	<b>1881</b>	<b>1691</b>	<b>2036</b>
<b>Intensity Measurement tonnes of CO<sub>2</sub>e per full time equivalent <sup>5</sup></b>	5.4 <sup>5</sup>	3.9 <sup>5</sup>	3.8 <sup>5</sup>	2.97 <sup>5</sup>	3.33 <sup>5</sup>	3.62 <sup>5</sup>	3.75 <sup>5</sup>	3.7 <sup>5</sup>	3.5 <sup>5</sup>	4.0 <sup>5</sup>	3.9 <sup>5</sup>	4.2 <sup>5</sup>	3.4 <sup>5</sup>	4.1 <sup>5</sup>
<b>Number of full-time equivalents plus councillors</b>	<b>247.07 + 49 = 296.07</b>	<b>245.07 + 49 = 294.07</b>	<b>240.98 + 36 = 276.48</b>	<b>278.05 + 24 = 302.05</b>	<b>245.01 + 37 = 282.01</b>	<b>234.53 + 36 = 270.53</b>	<b>243.36 + 37 = 280.36</b>	<b>241.4 + 37 = 278.4</b>	<b>245.77 + 37 = 282.77</b>	<b>243.28 + 37 = 280.28</b>	<b>246 + 37 = 283</b>	<b>263.71 + 37 = 300.71</b>	<b>265.82 + 37 = 302.82</b>	<b>288.54 + 37 = 325.54</b>

<sup>1</sup> Tonnes of carbon dioxide equivalent (CO<sub>2</sub>e). CO<sub>2</sub>e is a universal unit of measurement that allows the global warming potential of different GHGs to be compared.

<sup>2</sup> Original total gross CO<sub>2</sub>e emissions as published in previous GHG reports.

<sup>3</sup> New CO<sub>2</sub>e total gross emissions re-calculated in 2013 using new conversion factors.

<sup>4</sup> New CO<sub>2</sub>e total gross emissions re-calculated in 2013 using new conversion factors and using litres of fuel for fleet.

<sup>5</sup> Calculated using scope 1 and 2 only as per Defra Guidance.

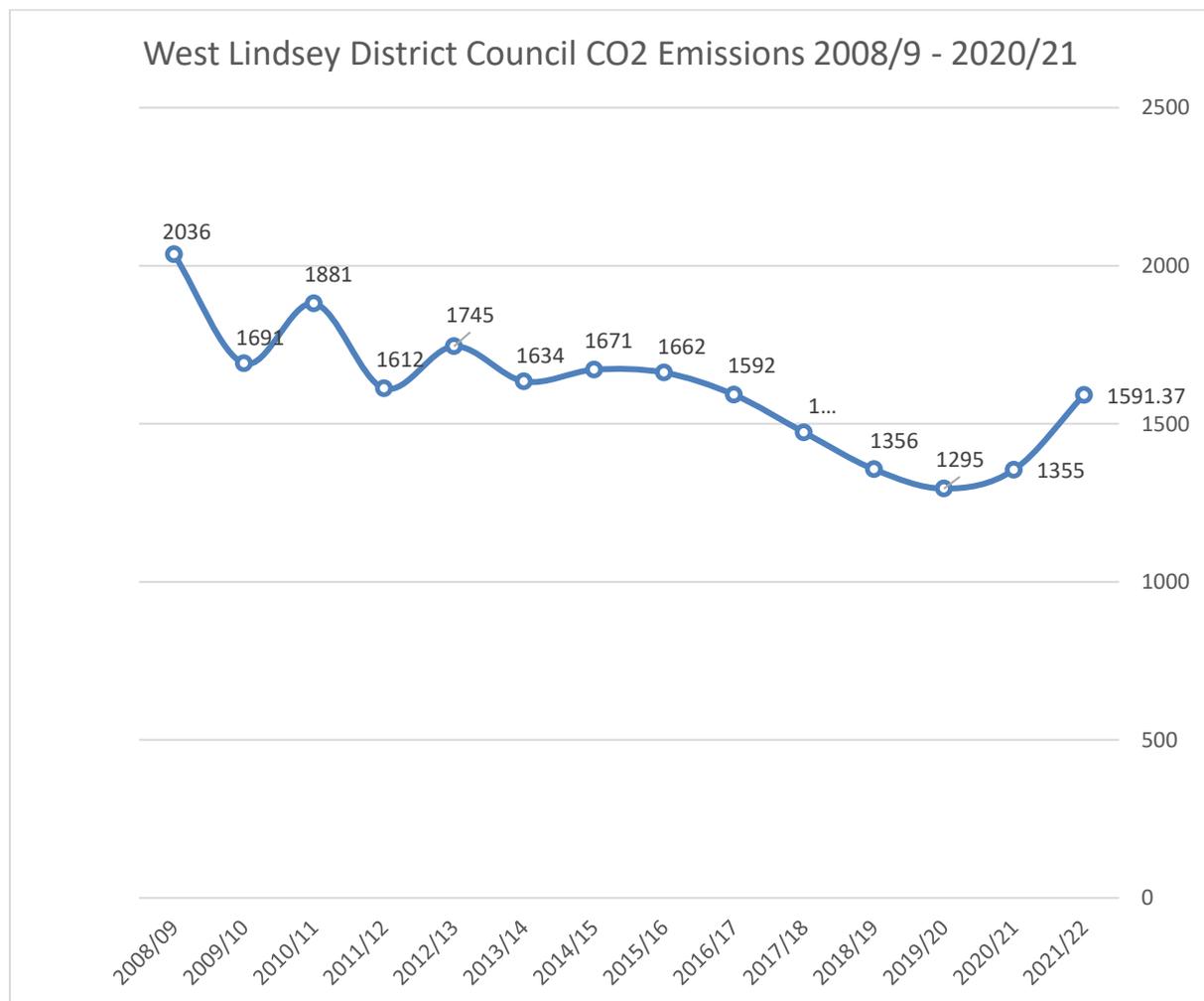
Our carbon footprint was restated in 2013 for all years (from the baseline year of 2008/9 onwards) in order to account for material changes to the conversion factors provided by DEFRA for company reporting purposes. For further information on the re-baselining of Greenhouse Gas (GHG) emissions, please refer to DEFRA's 'Environment Reporting Guidelines', found at:

<https://www.gov.uk/government/publications/environmental-reporting-guidelines-including-mandatory-greenhouse-gas-emissions-reporting-guidance>

We also took the opportunity to re-calculate fleet emissions based on liters of fuel as it is recommended that this more accurate measurement is used, rather than mileage: however we only have data on liters of fuel used for 10/11, 11/12, 12/13, 13/14 and 14/15 which means that comparing figures with 08/09 and 09/10 is not advisable.

Local Authority operations are most suited to the 'Operational Control' methodology for reporting greenhouse emissions. This approach is used across the whole of the operations undertaken by the local authority.

**Fig 1. WLDC Combined CO2e Emissions over Time (2008/9 – 2021/22)**



**Table 1: Which activities are included in each scope?**

	Scope 1 - Direct	Scope 2 - Indirect	Scope 3 - Other Indirect	Outside of Scope
<b>Building &amp; Street Lighting</b>	Natural Gas Emissions - used for heating WLDC buildings.	Electricity - used in WLDC buildings for lighting, computers, printers, heating etc.	Natural Gas Emissions - used for heating at Gainsborough/Market Rasen Leisure Centres.	
	Burning Oil - used for heating.	Electricity - used for our car parks, markets and lighting.	Electricity - used at Gainsborough/Market Rasen Leisure Centres.	
	Lea Fields Crematorium – LPG used for cremating service	Electricity - used for Parish street lighting.		
<b>Transport Fleet &amp; Business Mileage</b>	Fleet - HGV diesel		Staff Mileage - business mileage accrued in employees own vehicles.	Biofuel Component of Fleet fuel usage.
	Fleet - van/light commercial vehicle, diesel.		Councillor Mileage - business mileage accrued in councillors own vehicles.	
	Fleet - miscellaneous		Contractor Mileage - business mileage.	

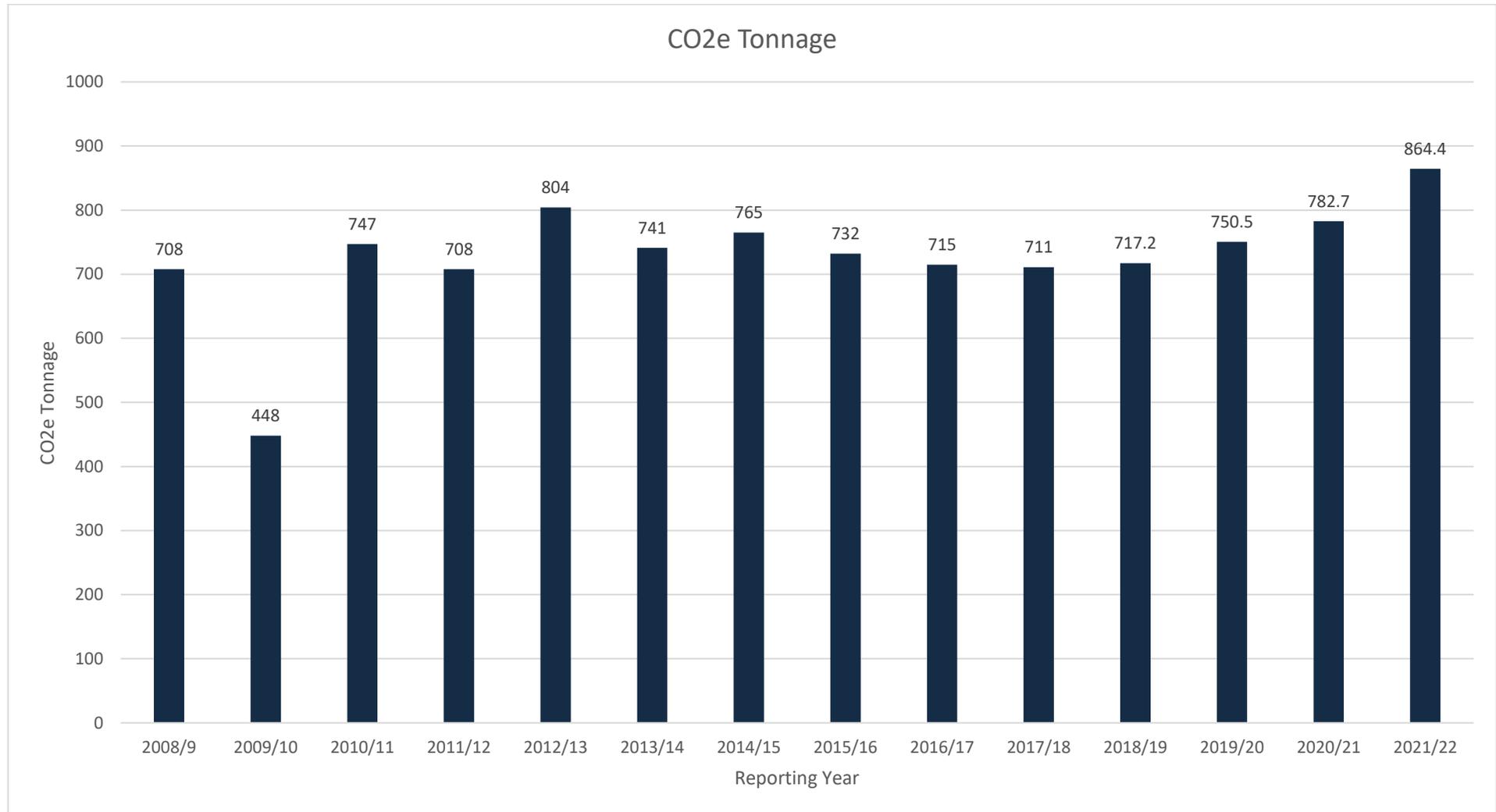
WLDC have measured Scope 1, Scope 2 and significant Scope 3 emissions. Natural gas and electricity usage in the Leisure Centers fall into the Scope 3 category as this facility is managed by a contractor on behalf of the council. Business mileage accrued by staff and Councilors are also classed as Scope 3 emissions because the council does not own these vehicles, while WLDC's fleet (mostly associated with the activity of refuse collection) is included in Scope 1 as the emissions from these are direct. Since 2015, WLDC has also been including its own stock of parish street lighting in calculations for Scope 2 emissions. In line with DEFRA guidelines, WLDC have also calculated the biofuel component of its diesel usage and these are listed as 'out of scope', yet counted in the final emissions calculation.

## Scope 1 Emissions 2021/22

**Table 1: Which activities are included in each scope?**

Scope 1 Type	Description	Activity Metric (Unit) in 2020/21	Activity Metric (Unit) in 2021/22	% Increase/Decrease in kWh/Litres since 2020/21	GHG Emissions 2020/21 in CO <sub>2</sub> e (kg(tonnage - rounded))	GHG Emissions 2021/22 in CO <sub>2</sub> e (kg(tonnage - rounded))	% Increase/Decrease in Carbon Tonnage since 2020/21
<b>Natural Gas</b>	Natural gas usage in WLDC operated buildings.	339,013 kWh	363,897 kWh	7.34%	62,334kg (62t)	66,651kg (66.7t)	6.93%
<b>LPG Gas</b>	LPG Gas used at the Crematorium	38,188 kWh	46,135 kWh	20.81%	8,190.56kg (8.2t)	9,895.5kg (9.9t)	20.82%
<b>WLDC Fleet</b>	Diesel van 1.25 - 3.5t	0	0	0.00%	0kg (0t)	0kg (0t)	0.00%
	Diesel van <1.25t	4,625 Litres	3,879 Litres	16.13%	11,775kg (11.7t)	9,747kg (9.7t)	17.22%
	HGV rigid >17t	35,015 Litres	27,955 Litres	-20.16%	89,149kg (89.1t)	70,232kg (70.2t)	-21.22%
	HGV rigid 17-26t	233,765 Litres	256,940 Litres	9.91%	595,172kg (595.1t)	645,516kg (645.5t)	8.46%
	HGV rigid 3.5-7.5t	10,727 Litres	24,850 Litres	131.66%	27,311kg (16.6t)	62,433.51kg (62.4t)	128.60%

**Fig 2. WLDC Scope 1 GHG Emissions over time (2008/9 – 2021/22)**



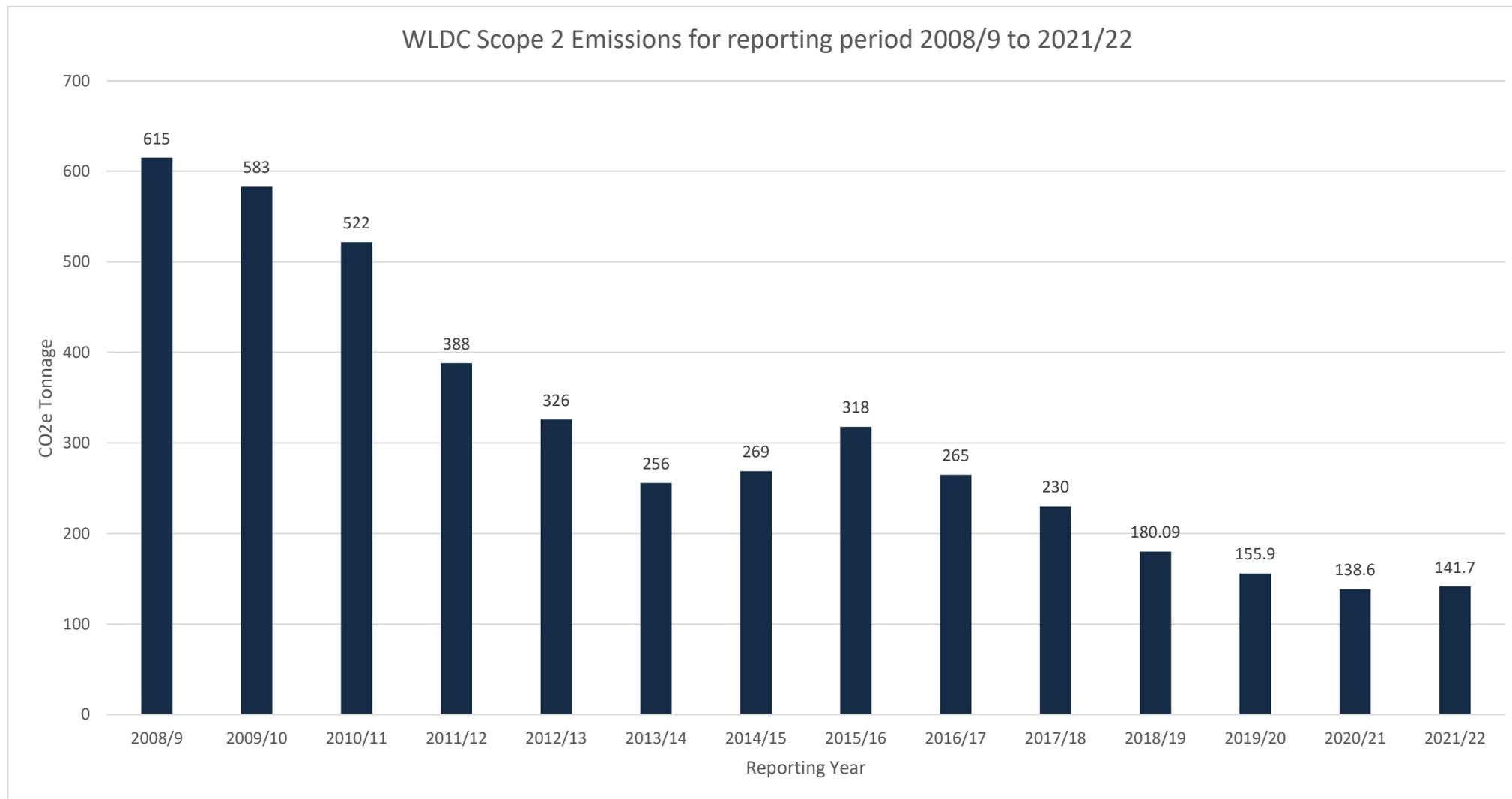
The majority of WLDC's Scope 1 emissions cover activities undertaken by the WLDC fleet. These mainly (though not exclusively) undertake activities related to refuse collection. WLDC's total scope 1 tonnage has increased by 10.44% (81.7 tonnes of CO2e) from the 2020/21 figure. The fleet emissions have increased by 10.57% (75.3 tonnes of CO2e) from the previous financial year. For natural gas there has been an increase in the tonnage, from the 2020/21 period increasing by 6.93% (4.7 tonnes of CO2e)

## Scope 2 Emissions 2021/22

**Table 3: Scope 2 Greenhouse Gas Emissions**

Scope 2 Type	Activity Metric (Unit) in 2020/21	Activity Metric (Unit) in 2021/22	% Increase/Decrease in kWh since 2020/2021	GHG Emissions 2020/21 in CO <sub>2</sub> e (kg(tonnage - rounded))	GHG Emissions 2021/22 in CO <sub>2</sub> e (kg(tonnage - rounded))	% Increase/Decrease in Carbon Tonnage since 2020/21
Electricity used in WLDC Buildings	267,910.81 kWh	317,777.22 kWh	18.61%	62,460.73kg (62.5t)	67,473.64kg (67.5t)	8.03%
Electricity used in car parks, markets & lighting	43,868 kWh	48,007.67 kWh	9.44%	10,277.39kg (10.3t)	10,193.47kg (10.2t)	-0.82%
Electricity used in parish street lighting	282,241	301,623	6.87%	65,801kg (65.8t)	64,043.61 (64t)	-2.74%

**Fig 3. WLDC Scope 2 GHG Emissions over time (2008/9 – 2021/22)**



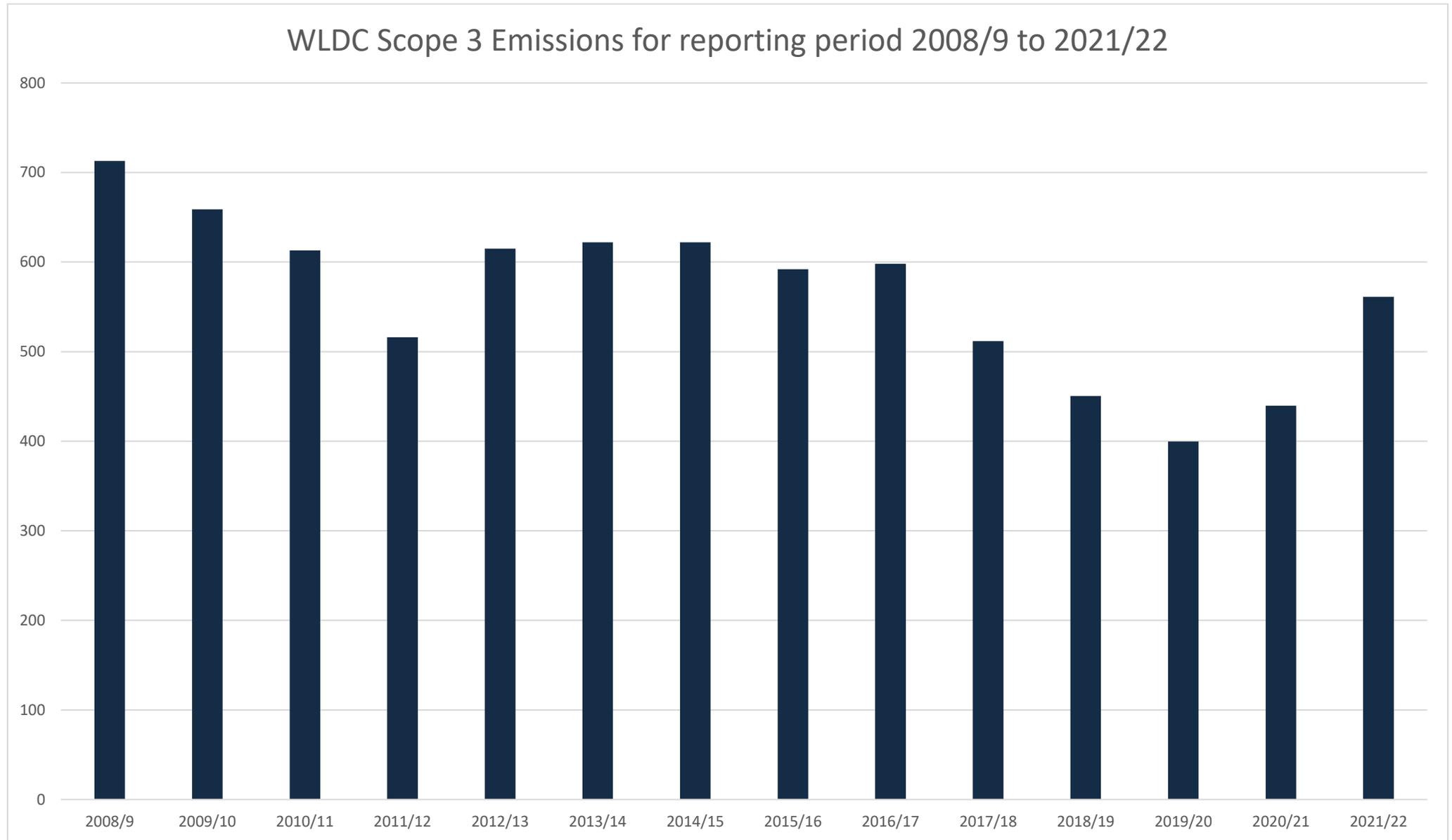
WLDC's Scope 2 emissions mainly relate to the usage of electricity in WLDC's buildings and operations, as well as parish street lighting (first included in GHG reporting in 2014). The total CO<sub>2</sub>e emissions for Scope 2 has increased by 3.1 tonnes of CO<sub>2</sub>e compared to the 2020/21 financial period, meaning there has been a total reduction of 473.3 tonnes since the established baseline year of 2008/9. This represents a substantial reduction in the council's energy consumption but it is expected to climb slightly given office occupancy levels increasing post-covid. There is potential for further reductions due to office lighting being converted to LEDs which means less energy is converted to heat meaning a more efficient usage of electricity. The same assumption can be set for WLDC's street lighting once they are converted to LEDs with dimming capabilities.

## Scope 3 Emissions 2021/22

**Table 4: Scope 3 Greenhouse Gas Emissions**

Scope 3 Type	Comments/Exclusions	Activity Metric (Unit) in 2020/21	Activity Metric (Unit) in 2021/22	% Increase/Decrease in kWh/km since 2020/21	GHG Emissions 2020/21 in CO <sub>2</sub> e (kg(tonnage - rounded))	GHG Emissions 2021/22 in CO <sub>2</sub> e (kg(tonnage - rounded))	% Increase/Decrease in Carbon Tonnage since 2020/21
<b>Natural Gas used in Leisure Centres</b>	Includes both Gainsborough and Market Rasen Leisure Centres	1,514,433.7 kWh	2,329,029.57 kWh	53.79%	278,458.9kg (278.5t)	426,585.06kg (426.6t)	53.18%
<b>Electricity used in Leisure Centres</b>	Includes both Gainsborough and Market Rasen Leisure Centres	357,864 kWh	302,905 kWh	15.36%	83,432.5kg (83.4t)	64,315.97kg (64.3t)	-22.90%
<b>Employee Mileage</b>	This includes all mileage falling under the operational scope of WLDC (as determined through the number of miles paid for through expenses).	96,448 KM	137,923.65 KM	43.00%	16,531kg (16.5t)	23,640kg (23.6t)	7.10%
<b>Councillor Mileage</b>		7,012 KM	24,745 KM	252.90%	1202kg (1.2t)	4,241kg (4.2t)	250.00%
<b>Total Business Mileage</b>	Employee and councillor mileage combined.	103,460 KM	162,669 KM	57.23%	17,733kg (17.7t)	23,881kg (23.9t)	35.03%
<b>T&amp;D losses for scope 2 electricity</b>		594,020 kWh	667,407.9 kWh	12.35%	11,910 (11.91t)	12,540 (12.5t)	5.29%
<b>T&amp;D losses for scope 3 electricity</b>		357,864 kWh	302,905.7 kWh	-15.36%	7,175kg (7.2t)	6,073.26 (6.1t)	-15.28%

**Fig 3. WLDC Scope 3 GHG Emissions over time (2008/9 – 2021/22)**



All data used when referring to colleague and councilor business mileage data has been aggregated using the DEFRA average car conversion factor. This year has increased quite greatly due to the West Lindsey Leisure Centre's increased gas usage and an uptake in staff and councilors claiming mileage as the organization returns to normal operation.

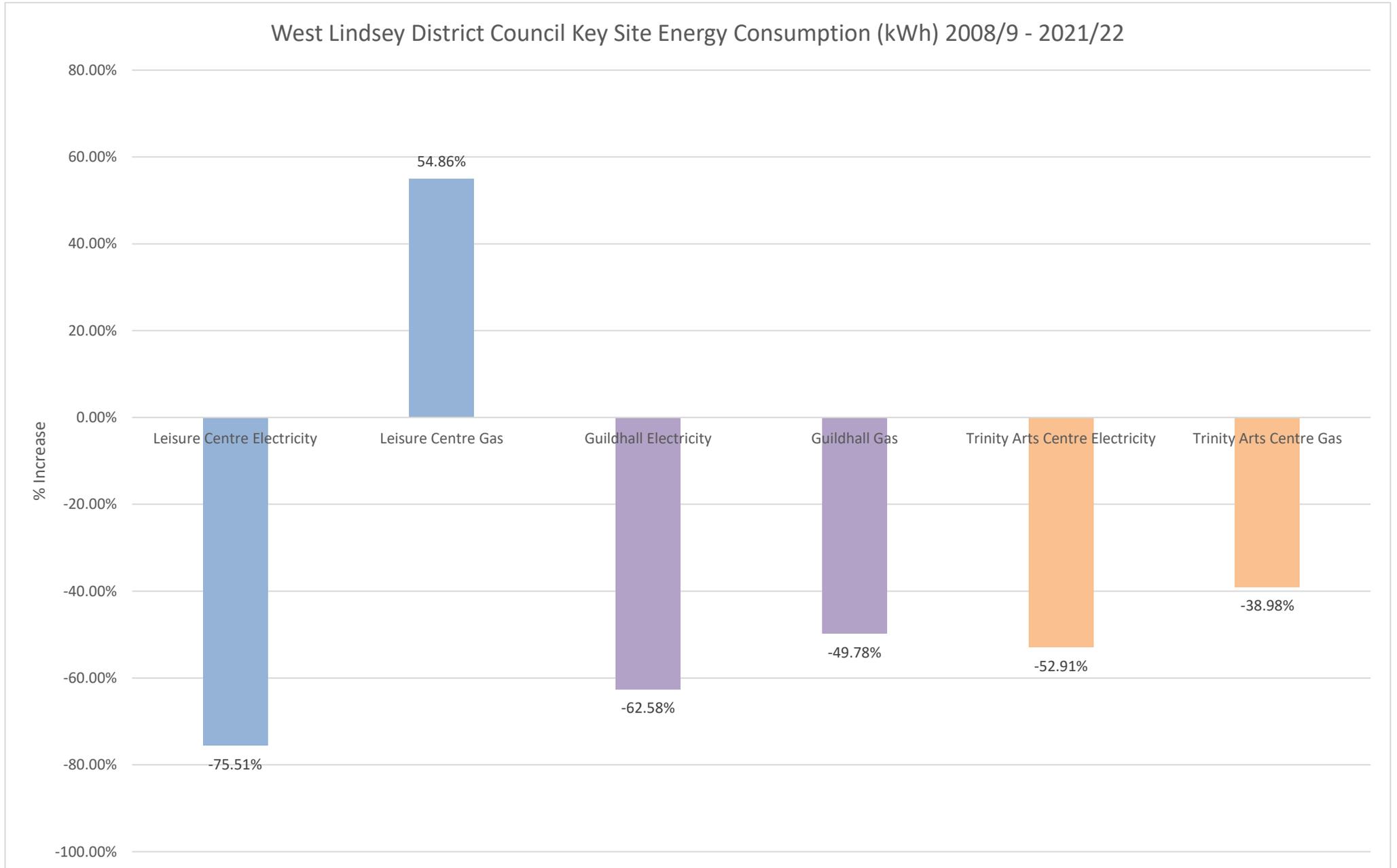
## Appendix: Further Tables & Graphs Summarizing WLDC Emissions

**Table 5: Reductions in CO2e at the Leisure Centre, Guildhall and Trinity Arts Centre**

Energy compared to baseline year of 2008/09	2021/22 kWh	2008/9 kWh	Total % change in kWh 2008/9 - 2021/22	2021/22 tonnage	2008/9 tonnage	Total tonnage change in annual CO2e 2008/9 - 2021/22
<b>Leisure Centre Electricity</b>	172,331	703,610	-75.51%	36.59	368	-331.41
<b>Leisure Centre Gas</b>	2,205,877	1,424,442	54.86%	404.03	263	141.03
<b>Guildhall Electricity</b>	152,702	408,025	-62.58%	32.42	213	-180.58
<b>Guildhall Gas</b>	131,259	261,354	-49.78%	24.04	48	-23.96
<b>Trinity Arts Centre Electricity</b>	58,123	123,437	-52.91%	12.34	64	-51.66
<b>Trinity Arts Centre Gas</b>	185,083	303,338	-38.98%	33.9	56	-22.10

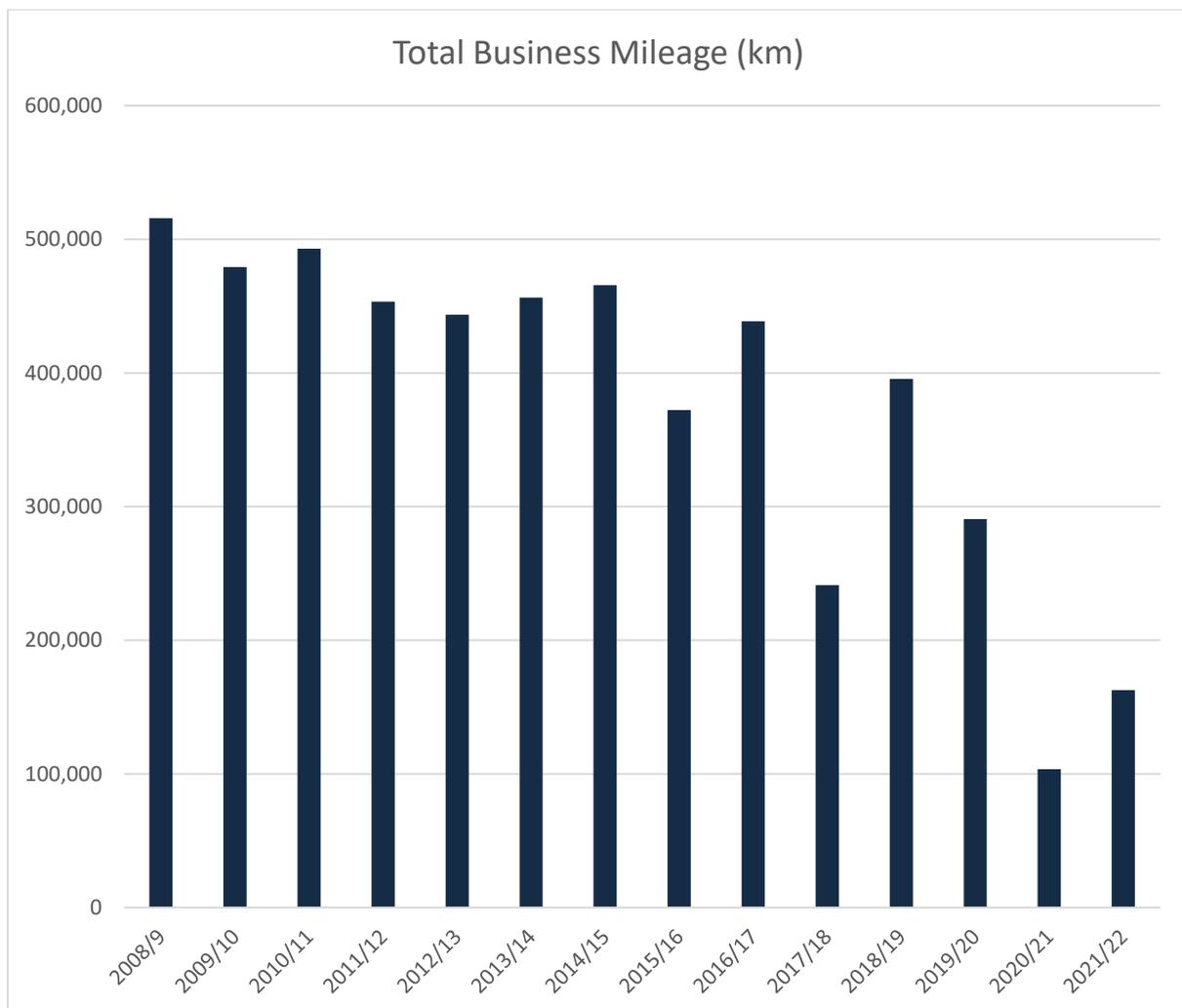
*\*The Guildhall has its kWh apportioned due to a portion of the building being let out to tenants which falls outside of WLDC's operational scope.*

**Reductions in Energy Consumption at key WLDC sites**



**Table 6: WLDC Total Business Mileage 2008/9 – 2021/22**

Reporting Year	Total Business Mileage (km)
2008/9	515,711
2009/10	479,164
2010/11	492,938
2011/12	453,274
2012/13	443,628
2013/14	456,398
2014/15	465,767
2015/16	372,144
2016/17	438,729
2017/18	241,265
2018/19	395,553
2019/20	290,620
2020/21	103,460
2021/22	162,669





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